UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/618,873	07/19/2000	Seshadri Nambirajan	Seshadri 1999-0357	2658

7590 05/04/2004

AT & T Corp
P O Box 4110
Middletown, NJ 07748

EXAMINER	
MATTIS, JASON E	
ART UNIT	PAPER NUMBER
2665	12

DATE MAILED: 05/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/618,873	NAMBIRAJAN, SESHADRI	
	Examiner	Art Unit	
	Jason E Mattis	2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 March 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This office action is in response to Applicant's Amendment C filed on 3/17/04.

Claim Objections

1. Claim 1 is objected to because of the following informalities: In a previous amendment, step d of claim 1 was amended to state, "...excess capacity..." instead of "...access capacity...". In Amendment C filed on 3/17/04, step d of claim 1 has been changed again to state, "...access capacity..."; however, there is no indication (underlining or strike through) that indicates that step d of claim 1 was intended to be amended to state, "...access capacity...".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 8-15, 12, and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 8 is indefinite. Claim 8 states, "The method of claim 7 where said control message that reduces bandwidth of said channel specifies a slot in a subset of the blocks of a frame for transmission of packets belonging to said channel than previously specified for the channel." Although claim 8 states, "said control message that reduces bandwidth of said channel specifies...", it is unclear whether the specified slot in a subset of the blocks is a slot that is to be used by the station or the specified slot in a subset of the blocks is a slot that is to be dropped by the station, thereby reducing the bandwidth of the channel. It is also unclear what is meant by "...than previously specified for the channel." For purposes of this examination, it is assumed that the specified slot is a slot that is to be used or maintained by the station. All the claims that depend on claim 8 are also indefinite due to the same reason.

Claim 12 recites the limitation "said reduced Quality of Service" in line 2 of the claim. There is no prior mention of "said reduced Quality of Service" in either claim 12 or claims 1, 4, 7, or 8, which claim 12 depends on. There is insufficient antecedent basis for this limitation in the claim. All the claims that depend on claim 12 are also indefinite due to the same reason.

Claim 22 recites the limitation "said destination" in line 2 of the claim. Claim 1, which claim 22 depends on, recites the limitation "a destination module", but since claim 22 states, "said destination" and not "said destination module" it is unclear what is

meant by "said destination". There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 2, 3, 4, 7, 16, 17, 18, 19, 21, 22, 24, and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Kay et al. (U.S. Pat. 5513183).

With respect to claim 1, Kay et al. discloses a method executed in a control node, a CAP **(See column 20 lines 9-12, column 20 lines 31-35, and column 21 lines 11-27 of Kay et al. for reference to a call control processor, also referred to as a channel access control, which is located in a base station controller that is part of a base station)**. Kay et al. also discloses controlling bandwidth of communication from a station, mobile, to a destination module, base station **(See column 3 lines 30-44 of Kay et al. for reference to controlling the setup and dynamic assignment of voice traffic capacity between a mobile and a base station)**. Kay et al. further discloses that the station, mobile, sends packets that carry a voice signal in a channel specified by the control node, CAP **(See column 3 lines 30-44 and column 21 lines 11-27 of Kay et al. for reference to a mobile transmitting**

speech to a base station and for reference to the CAP performing voice channel allocation). Kay et al. also discloses ascertaining whether the station, mobile is in a relative silence period **(See column 16 lines 1-5 of Kay et al. for reference to the base station ascertaining that a speech spurt has terminated, meaning the mobile is in a relative silence period)**. Kay et al. further discloses when the step of first ascertaining concludes that the station is in the relative, sending a control message to the station, mobile, that reduces bandwidth of the channel **(See column 16 lines 1-13 of Kay et al. for reference to transmitting a reverse deallocation acknowledgment to the mobile, which effectively reduces the bandwidth allocated to the mobile channel by releasing the reverse channel)**. Kay et al. also discloses ascertaining whether the station, mobile, is in an active period **(See column 3 lines 45-53 of Kay et al. for reference to a speech detector detecting the onset of a speech spurt, which means the mobile is in an active period)**. Kay et al. further discloses when the step of ascertaining determines that the station, mobile, is in an active period, deteremining whether there is excess capacity that can be assigned to the station, mobile **(See column 3 line 64 to column 4 line 10 of Kay et al. for reference to the base station searching for available transmission capacity or available traffic slots that can be assigned to the mobile)**. Kay et al. also discloses sending a control message to the station, mobile that increases the bandwidth of the channel when the step of determining concludes that there is excess capacity that can be assigned to the station **(See column 3 line 64 to column 4 line 10 of Kay et al. for reference to the base station, on locating an available channel, increasing the bandwidth allotted to the**

mobile by allocating the available channel to the mobile and implementing a transmission to the mobile identifying the carrier frequency and slot number of the channel to be used).

With respect to claim 2, Kay et al. discloses that the station is a cellular phone **(See column 2 lines 18-21 column 3 lines 26-30 of Kay et al. for reference to telephone service over radio frequency links and for reference to assigning transmission capacity to a mobile user, with the mobile being a type of cellular phone)**. Kay et al. also discloses that the destination module is a base station **(See column 3 lines 31-44 of Kay et al. for reference to base stations managing a pool of transmission channels)**.

With respect to claim 3, Kay et al. discloses that the station is a cellular phone **(See column 2 lines 18-21 column 3 lines 26-30 of Kay et al. for reference to telephone service over radio frequency links and for reference to assigning transmission capacity to a mobile user, with the mobile being a type of cellular phone)**. Kay et al. also discloses that the destination module is a base station **(See column 3 lines 31-44 of Kay et al. for reference to base stations managing a pool of transmission channels)**. Kay et al. further discloses that the control node, CAP, is located within the base station **(See column 20 lines 9-12, column 20 lines 31-35, and column 21 lines 11-27 of Kay et al. for reference to a call control processor, also referred to as a channel access control, which is located in a base station controller that is part of a base station)**.

With respect to claim 4, Kay et al. discloses that the station, mobile, communicates its packets in time slots assigned by the control node, CAP, that recur at a given rate **(See column 7 line 52 to column 8 line 34 and Figure 2 of Kay et al. for reference to, during a specific speech spurt, a mobile communicating packets in time slots assigned by the CAP the recur at a given rate in each frame during the time spurt, for example, during the first time spurt of mobile station 15, MS15 communicates in time slot 1 which recurs at a give frame for the duration of the time spurt, from frames 1-6)**.

With respect to claim 7, Kay et al. discloses that the time slots are time slots having a first specified ordinal position in a block of time slots, where a preselected number of blocks of time slots form a frame **(See column 7 line 52 to column 8 line 34 and Figure 2 of Kay et al. for reference to time slots having ordinal positions 1-6, with a group of the slots forming a frame)**.

With respect to claim 16, Kay et al. discloses that the station, mobile, communicates its packets in a frequency band assigned by the control module, CAP **(See column 3 line 64 to column 4 line 10 of Kay et al. for reference to the mobile being sent an identification of the channel it is to be allocated, which includes a carrier frequency allocation, meaning the mobile must communicate in the identified frequency band)**.

With respect to claim 17, Kay et al. discloses the steps a) and b) are carried out when the control node believes the station, mobile, to be active and operating at full bandwidth **(See column 16 lines 1-13 of Kay et al. for reference to transmitting a**

reverse deallocation acknowledgment to the mobile after a termination of the speech spurt is detected, meaning the control node believes the mobile to be active since it only monitors for the end of a speech spurt after the beginning of a speech spurt has been detected).

With respect to claim 18, Kay et al. discloses that steps c) through e) are carried out when the control node believes the station, mobile, to be operating at less than full bandwidth **(See column 3 line 64 to column 4 line 10 of Kay et al. for reference to the base station increasing the bandwidth allotted to the mobile in response detecting the beginning of a speech spurt, which means the control mode must believe the station is operating at less then full bandwidth since it monitors for a signal indicating the beginning of a speech spurt only when a mobile is not allocated a channel, meaning the mobile is operating at less than full bandwidth).**

With respect to claim 19, Kay et al. discloses that the control node, CAP executes the steps a) through e) for each station, mobile, that shares a transmission medium in which the channel resides **(See column 7 line 52 to column 8 line 34 and Figure 2 of Kay et al. for reference to the process of assigning and deallocating communication channels for multiple mobile stations that share the transmission medium in which the channel resides).**

With respect to claim 21, Kay et al. discloses the control node, CAP receiving a message from the station, mobile, that informs the control node that the station has entered the silence period **(See column 4 lines 27-42 of Kay et al. for reference to**

detecting the end of a speech spurt and sending a transmission to the control node to deallocate the traffic channel, which decreases the bandwidth of the channel).

With respect to claim 22, Kay et al. discloses that the control node, CAP, receives the message form the station, mobile, via the destination, base station **(See column 4 lines 27-42, column 20 lines 9-12, column 20 lines 31-35, and column 21 lines 11-27 of Kay et al. for reference to sending the message to the base station, which includes a transceiver where the message is received, and also includes a CAP, which controls the allocation of traffic channels, meaning the base station receives the message an the CAP, which controls all allocation of traffic channels receives the message from the base station).**

With respect to claim 24, Kay et al. discloses that the control node, CAP, receives a message from the station, mobile, that informs the control node, CAP, the station has entered an active period **(See column 3 lines 45-63 of Kay et al. for reference to a speech detector detecting the onset of a speech spurt, which means the mobile is in an active period, and the mobile sending a channel allocation request message to the control node, which informs the control node that the mobile has entered an active period).**

With respect to claim 25, Kay et al. discloses the control node, CAP, receiving a message from the station, mobile, that informs the control node, CAP, that the station, mobile, is about to enter the active period **(See column 3 lines 45-63 of Kay et al. for reference to a speech detector detecting the onset of a speech spurt, which**

means the mobile is in an active period, and the mobile sending a channel allocation request message to the control node, which informs the control node that the mobile is about to enter an active period).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 5, 6, 8, 9, 11, 12, 13, 14, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kay et al. in view of Hamalainen et al. (WO 96/10305).

With respect to claim 5, Kay et al. does not disclose that the control message that reduces the bandwidth of the channel specifies time slots that recur at a lower rate.

Hamalainen et al., in the field of communications, discloses reducing the bandwidth of a mobile station by specifying time slots that recur at a lower rate **(See page 14 line 24 to page 15 line 3 of Hamalainen et al. for reference to reducing the number of time slots, which means since less time slots are allocated they will occur at a lower rate, and thus reducing the data transfer rate of the data calls).** Reducing the number of time slots allocated to a user has the advantage of freeing more time slots for new users to have.

It would have been obvious to one of ordinary skill in the art at the time of the invention, when presented with the work of Hamalainen et al., to combine the time slot

reducing method of Hamalainen et al., with the bandwidth control method of Kay et al., with the motivation being to free more time slots for new users to have.

With respect to claim 6, Kay et al. does not disclose that the control message that reduces the bandwidth of the channel specifies time slots that recur at a lower average rate.

Hamalainen et al., in the field of communications, discloses reducing the bandwidth of a mobile station by specifying time slots that recur at a lower average rate **(See page 14 line 24 to page 15 line 3 of Hamalainen et al. for reference to reducing the number of time slots, which means since less time slots are allocated they will occur at a lower average rate, and thus reducing the data transfer rate of the data calls)**. Reducing the number of time slots allocated to a user has the advantage of freeing more time slots for new users to have.

It would have been obvious to one of ordinary skill in the art at the time of the invention, when presented with the work of Hamalainen et al., to combine the time slot reducing method of Hamalainen et al., with the bandwidth control method of Kay et al., with the motivation being to free more time slots for new users to have.

With respect to claim 8, Kay et al. does not disclose that the control message that reduces bandwidth of the channel specifies a slot in a subset of the blocks of a frame for transmission of packets belonging to the channel than previously specified.

Hamalainen et al., in the field of communications, discloses disclose that the control message that reduces bandwidth of the channel specifies a slot in a subset of the blocks of a frame for transmission of packets belonging to the channel than

previously specified **(See page 14 line 1 to page 15 line 3 of Hamalainen et al. for reference to reducing allocated bandwidth by reducing the number of time slots allocated to a user and keeping the remaining time slots allocated to that user meaning that the some slots of the previously allocated time slots of a frame belonging to the user's channel are specified to be dropped and other slots are specified to be maintained)**. Specifying which time slots are to be dropped and which time slots are to be maintained has the advantage of allowing the controller to choose the best slots for the mobile to maintain and the best slots for the mobile to drop when reducing the bandwidth.

It would have been obvious to one of ordinary skill in the art at the time of the invention, when presented with the work of Hamalainen et al., to combine the time slot reducing method of Hamalainen et al., with the bandwidth control method of Kay et al., with the motivation being to allow the controller to choose the best slots for the mobile to maintain and the best slots for the mobile to drop when reducing the bandwidth.

With respect to claim 9, Kay et al. does not disclose the number of blocks in the subset of blocks is not less than a preselected proportion of the number of blocks that form a frame.

Hamalainen et al. discloses the number of blocks in the subset of blocks is not less than a preselected proportion of the number of blocks that form a frame **(See page 14 line 1 to page 15 line 3 of Hamalainen et al. for reference to the number of time slots specified to maintain not being less than a predetermined number of slots, which are needed to meet the minimum bandwidth requirement of the user)**.

Specifying not less than a predetermined number of time slots to maintain has the advantage of making sure that the user will still be able to communicate after reducing the user's bandwidth.

It would have been obvious to one of ordinary skill in the art at the time of the invention, when presented with the work of Hamalainen et al., to combine the time slot reducing method of Hamalainen et al., with the bandwidth control method of Kay et al., with the motivation being to make sure that the user will still be able to communicate after reducing the user's bandwidth.

Whit respect to claim 11, Kay et al. does not disclose that the proportion is related to a reduced Quality of Service that the station is to maintain.

Hamalainen et al. discloses that the proportion is related to a reduced Quality of Service that the station is to maintain **(See page 14 line 1 to page 15 line 3 of Hamalainen et al. for reference to only reducing the number of time slots allocated to a user to a minimum requirement, which provides for a minimum, or reduced, Quality of Service that the user is to maintain)**. Setting the proportion of dropped time slots to maintained time slots in relation to a reduced Quality of Service that a station is to maintain has the advantage of freeing some time slots for use by other stations while making sure that the current stations is still operable at a reduced Quality of Service.

It would have been obvious to one of ordinary skill in the art at the time of the invention, when presented with the work of Hamalainen et al., to combine the time slot reducing method of Hamalainen et al., with the bandwidth control method of Kay et al.,

with the motivation being to free some time slots for use by other stations while making sure that the current stations is still operable at a reduced Quality of Service.

With respect to claim 12, Kay et al. discloses that the freed capacity includes at least a number of blocks necessary to provide the reduced Quality of Service **(See column 7 line 52 to column 8 line 34 and Figure 2 of Kay et al. for reference to the amount of freed capacity being a full channel, meaning that the freed capacity is enough for another mobile to communicate at full bandwidth)**.

With respect to claim 13, Kay et al. discloses assigning the freed capacity to another station **(See column 7 line 52 to column 8 line 34 and Figure 2 of Kay et al. for reference to the freed capacity, or channels, from mobile stations that have terminated their speech spurt being assigned to other mobile stations that are beginning a speech spurt)**.

With respect to claim 14, Kay et al. discloses the another station is a station that sends packets that carry a voice signal **(See column 7 line 52 to column 8 line 34 and Figure 2 of Kay et al. for reference to mobile stations MS1, MS2, MS4, MS8, MS11, MS15, MS19, MS21, and MS22 all transmitting speech spurts meaning they are stations that send packets that carry a voice signal)**.

With respect to claim 15, Kay et al. does not disclose the another station is a station that sends packets of a non real-time source.

Hamalainen et al. discloses the another station is a station that sends packets of a non real-time source **(See page 1 lines 26-28 of Hamalainen et al. for reference to users making data transmissions, which are non real-time and different from**

speech transmissions). Having stations be able to transmit data as well as voice has the advantage of allowing mobile users to access data networks, such as the Internet, as well as the PSTN phone network.

It would have been obvious to one of ordinary skill in the art at the time of the invention, when presented with the work of Hamalainen et al., to combine stations transmitting packets of a non real-time source, as suggested by Hamalainen et al., with the voice packet transmission method of Kay et al., with the motivation being to allow mobile users to access data networks, such as the Internet, as well as the PSTN phone network.

8. Claims 20 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kay et al. in view of Davis et al. (U.S. Pat. 5835486).

With respect to claims 20 and 23, Kay et al. does not disclose measuring the voice signal embedded in the packets. However, Kay et al. does disclose determining, with the help of speech detectors, whether a station is in a silence period or an active period **(See column 3 line 44 to column 4 line 45 of Kay et al. for reference to speech detectors determining the onset and termination of speech bursts, which correspond to determining whether a station is in an active or silence period)**.

Davis et al., in the field of communications, discloses the use of a speech detector, which measure speech packet data to determine if speech is present or not **(See column 9 lines 36-55 of Davis et al. for reference to a speech detector accessing bits from packet data to determine if speech is present in a packet**

communication). Measuring a voice signal embedding in packets has the advantage of providing an effective way of determining whether speech is present in a packet communication.

It would have been obvious to one of ordinary skill in the art at the time of the invention, when presented with the work of Davis et al., to combine the speech detector of Davis et al. with the voice packet transmission method of Kay et al., with the motivation being to provide an effective way of determining whether speech is present in a packet communication.

Allowable Subject Matter

9. As allowable subject matter has been indicated, applicant's reply must either comply with all formal requirements or specifically traverse each requirement not complied with. See 37 CFR 1.111(b) and MPEP § 707.07(a).

10. Claim 10 would be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claim; and if amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

11. The following is a statement of reasons for the indication of allowable subject matter: Claim 10 is allowable over the prior art of record since the cited reference taken individually, or in combination, fail to particularly disclose **said number of blocks in**

said subset of blocks is not less than a quarter of said number of blocks that form said frame. It is noted that the closes prior art Hamalainen et al. discloses reducing the number of time slots allocated to a user down to only a minimum requirement. However, Hamalainen et al. fails to disclose or render obvious the above underlined limitations as claimed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason E Mattis whose telephone number is (703) 305-8702. The examiner can normally be reached on M-F 8AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (703) 305-4798. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

jem

RICKY NGO
PRIMARY EXAMINER